Q. IS EXPANSION OF CABLE VOICE SERVICES EXPECTED IN VIRGINIA AS WELL?

A. Yes, expansion in Virginia is mirroring national expansion. Cox has deployed cable telephony to nearly all of the homes it passes in Verizon's service area. After five years of offering circuit switched based telephony, Cox introduced its digital voice product in Roanoke in 2004, announcing at that time "our take rate in Roanoke is at the same take rate as in our other (non-VoIP) deployments. It is looking to us like we will be deploying VoIP much more in the future."[54] In fact, Cox Digital Voice is now available in Northern Virginia, and is being deployed in other parts of Verizon's service territory as well.

Comcast first deployed its Digital Voice product ("CDV") in Richmond in late 2005 and, nationwide, added more Digital Voice customers in first quarter 2006 than in all of 2005. Comcast expects to be at 80 percent of homes marketable to its entire footprint by the end of 2006 and 90 plus percent by the end of this year.[55] As mentioned above, Comcast plans to roll-out IP-based telephony over its newly acquired Adelphia assets as soon as possible. This is consistent with Comcast CEO Brian Roberts' statements above that it would market its "Triple Play" package of video, voice and data services to the majority of its customers by the end of 2006.[56]

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[54] *See* http://www.americasnetwork.com/americasnetwork/article/articleDetail.jsp?id=122134 (accessed November 14, 2006).

[55] *See* "CMCSA – Q3 2006 Comcast Corporation Earnings Conference Call," Final Transcript, October 26, 2006.

[56] *See* Comcast Press Release, issued April 27, 2006 "*Comcast Reports First Quarter 2006 Results.*"

Although Charter has not yet deployed its voice product in Verizon's service area, it currently offers that product in Bristol, and its President and CEO stated on April 17, 2006 that Charter "will continue to aggressively roll out telephone service to make the three-product bundle available in a majority of [its] footprint and [it's] on track to offer telephone services to between six and eight million homes by year-end."[57]

In fact, customer service representatives for these cable companies confirmed many of these media reports regarding the companies' expansion plans. One Charter representative indicated that by December of 2006, VoIP would be available in every Virginia market that Charter currently serves. This expanded cable voice availability to an additional 89,000 households in nine separate MSA/non-MSA regions, including 41,000 in the Virginia Beach MSA, 7,500 in the Blacksburg MSA, and 32,000 in the Eastern Shore, Northern Neck, Southside, and Southwest non-MSA regions.[58] Comcast representatives also indicated that the company "will soon be completing a full roll-out of VoIP" in the portion of the Washington, DC MSA, containing nearly 90,000 homes, (i.e., Alexandria and Arlington) where the company currently does not yet offer voice. As mentioned above, Comcast has already deployed VoIP to roughly 200,000 households in the Washington, DC MSA.

[57] *See* Charter April 17, 2006 Press Release, *Charter Ramps Up Telephone Launches: Adds 1 Million Homes Passed in Seven New Markets; Now Serves 191,000 Phone Customers.*

[58] Warren Communications News, Inc., *The Television and Cable Factbook and Census Bureau.*

Q. ARE THE CABLE MSOS EXPANDING THEIR SERVICE OFFERINGS BEYOND THE "TRIPLE PLAY" IN ORDER TO COMPETE MORE EFFECTIVELY FOR RESIDENTIAL CUSTOMERS?

A. Yes. In the face of price competition and LEC entry into video, cable companies continue to expand their offerings, especially in the wireless services area, through strategic alliances and exploration of new technologies. For example, in late 2005, cable providers Time Warner Cable, Comcast, Cox and Advance/Newhouse (parent of Bright House Networks), in conjunction with Sprint Nextel, announced a joint venture enabling them to offer the "quadruple play" of video, voice, Internet and wireless services. The venture has the potential to serve approximately 75 million homes currently passed by the cable companies.[59] The companies also announced plans to launch service in seven metro areas over the next few months, and plan a full nationwide launch in the beginning of 2007. They are planning to integrate all of Sprint's cellular phone, broadband data, mobile video and other capabilities into cable's traditional services to create a broad array of converged applications.[60] Cablevision, which did not enter the joint venture with Sprint Nextel, plans to make its digital home phone network compatible with any U.S. wireless network, allowing subscribers to transfer calls between the two.[61]

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[59] *See, e.g.*, Comcast Press Release, *Sprint Nextel, Comcast, Time Warner Cable, Cox Communications and Advance/Newhouse Communications to Form Landmark Cable and Wireless Joint Venture*, November 2, 2005.

[60] *See* A. Breznick, *Cable-Sprint Wireless Venture Targets Seven Pilot Markets*, Cable Digital News, May 1, 2006, available at http://www.cabledatacomnews.com/may06/may06-1.html (accessed November 29, 2006).

[61] *See Cablevision Pursuing Wireless Service Plan*, Reuters, June 20, 2006, available at http://news.zdnet.com/2100-1035_22-6086089.html (accessed November 29, 2006).

Cable providers are also investigating new technologies to deliver traditional services. For example, Cable Digital News reports that

> CableLabs is exploring an industry-wide initiative tentatively titled 'CableRoam' to deliver data and voice services to customers over Wi-Fi, WiMAX, home Wi-Fi and other wireless broadband technologies.[62]

A recent article in *The Wall Street Journal* describes plans by Comcast and Time Warner "to expand offerings [to] route programs from personal computers to TV," to fend off competition from startups, entertainment companies and Internet sites that offer video on the Web."[63]

Q. WHAT IS THE SIGNIFICANCE OF THESE DEVELOPMENTS?

A. These developments are significant for at least two reasons. First, they provide compelling evidence that cable companies compete with the LECs ***today***. Second, they exemplify how technological developments stimulate further competition: as the LECs deploy more advanced services – video, Internet and wireless – and networks of their own, they will continue to spur the cable companies to compete even more vigorously. For example, in describing at&t's[64] efforts to market its DSL IP video offering, *The Wall Street Journal* pointed out that

> cable companies aren't waiting for the parade.... [C]ompanies like Comcast and Time Warner are pushing to add a wide range of new

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[62] *See* A. Breznick, *Cable Weighs Wireless Broadband Push to Fight Telcos*, Cable Digital News, April 1, 2006, available at http:/www.cabledatacomnews.com/apr06/apr06-2.html (accessed November 29, 2006).

[63] *See* P. Grant, *Cable Takes On Web Video*, The Wall Street Journal, June 29, 2006, at B1.

[64] Throughout this testimony "at&t" refers to the entity formed by the merger of AT&T and SBC and does not include Bell South.

features and content to their cable services, sometimes using the same Internet technology that AT&T is using.[65]

And as Dr. Taylor points out in his testimony, the competitive impact of Virginia's cable telephony providers already has had a significant impact on Verizon's access line losses, and this number is only expected to grow.

b. Wireless Providers

Q. ARE WIRELESS PROVIDERS REASONABLY MEETING THE COMMUNICATIONS NEEDS OF RESIDENTIAL CUSTOMERS IN VERIZON'S SERVING AREA?

A. Yes. Currently nine wireless providers serve residential customers in Verizon's Virginia service area – *i.e.*, Alltel Wireless, Appalachian, Cellular One, Cingular, NTELOS, Sprint/Nextel, T-Mobile, US Cellular and Verizon Wireless. Combined, these competitors provide wireless service coverage to virtually every residential household in Verizon's service area. Of the 2.5 million households in Verizon's service area, only 5,270 (only 0.2 percent) do not have coverage from at least one wireless carrier. Furthermore, over 93 percent of the households in Verizon's service area have service coverage from at least three carriers, and 44 percent (1.1 million) of households have service coverage from at least 6 different wireless carriers.

[65] D. Searcey and P. Grant, *Selling TV Like Tupperware*, The Wall Street Journal, June 29, 2006, at B1.

As shown in Table 2 below, every MSA and non-MSA region served by Verizon is covered by a wireless carrier.

Table 2.

Households Covered by Wireless Providers in Verizon's Service Territory – June 2006

Households by Number of Wireless Carriers Providing Coverage - Includes Verizon Wireless

MSA	Total Households	HH Covered by 0 Carriers	HH Covered by 1 Carriers	HH Covered by 2 Carriers	HH Covered by 3 Carriers	HH Covered by 4 Carriers	HH Covered by 5 Carriers	HH Covered by 6 Carriers	HH Covered by 7 Carriers
Blacksburg-Christiansburg-Radford, VA	58,454	934	6,135	1,412	8,997	9,402	22,819	8,755	-
Charlottesville, VA	8,113	1	-	1,210	2,782	1,750	2,116	211	43
Danville, VA	32,147	1	851	393	722	1,158	17,816	11,206	-
Harrisonburg, VA	40,878	32	1,296	4,222	3,129	5,847	7,931	18,421	-
Lynchburg, VA	86,608	4	-	3,939	4,781	11,320	54,998	10,694	872
No MSA-Eastern Shore	19,431	21	-	469	18,941	-	-	-	-
No MSA-North	33,929	4	3,596	5,521	10,670	10,418	2,538	1,070	112
No MSA-Northern Neck	38,660	44	1,526	26,476	8,404	2,209	1	-	-
No MSA-Northwest	27,969	-	625	3,000	1,583	550	7,212	13,693	1,306
No MSA-Southside	35,354	15	2,622	13,233	7,208	5,352	2,202	4,722	-
No MSA-Southwest	75,184	2,894	6,070	65,783	437	-	-	-	-
Richmond, VA	445,108	55	418	2,226	10,009	20,359	23,101	387,278	1,662
Roanoke, VA	93,374	2	1,659	293	384	375	588	89,281	792
Virginia Beach-Norfolk-Newport News, VA-NC	602,998	779	-	201	1,773	9,334	21,074	569,837	-
Washington-Arlington-Alexandria, DC-VA-MD-WV	890,156	481	92	6,451	32,850	837,303	12,823	156	-
Winchester, VA-WV	37,497	3	700	1,869	3,641	689	30,595	-	-
Grand Total	2,525,860	5,270	25,590	136,698	116,311	916,066	205,814	1,115,324	4,787

Source: Wireless coverage maps for Alltel Wireless, Appalachian, Cellular One, Cingular, NTELOS, Sprint/Nextel, T-Mobile, US Cellular and Verizon Wireless and Census Bureau.

Exhibit VA-12 to this filing includes maps displaying each wireless provider's coverage area in the Virginia MSA and non-MSA regions served by Verizon. Exhibit VA-13 includes a map displaying areas of carrier coverage overlap within each MSA and non-MSA region. As this map shows, every MSA and non-MSA

region has at least two dominant wireless options. The major population centers, as expected, are served by four to six carriers.

Only 1 percent of households (25,590) are covered by only one wireless carrier. However, in each of those areas, the single carrier is not Verizon Wireless.

Q. PLEASE PROVIDE A PROFILE OF SOME OF THE WIRELESS PROVIDERS SERVING RESIDENTIAL CUSTOMERS IN VIRGINIA TODAY.

A. The following are some of the major wireless carriers serving residential customers in Verizon's service area:

- **AllTel** boasts "America's only network quality guarantee," providing an automatic one-minute credit for any voice call dropped on the Alltel network.[66] With Alltel's "My Circle" plan, customers select ten wireless, home or business numbers anywhere in the U.S. and receive free unlimited calls to and from these numbers.

- **Cingular Wireless** claims to have "the largest voice and data network in America" with the "fewest dropped calls."[67] Cingular allows customers to roll over unused minutes from month to month. Calls to other Cingular customers are free. Family plans are available.

[66] *See* http://www.alltel.com/all4you/ (accessed November 14, 2006).

[67] *See* http://www.cingular.com/learn/ (accessed November 14, 2006).

- **NTELOS** promises "you'll get the most minutes, you'll find wireless made easy, you'll have coverage you can count on, you'll get local personal service you can trust, and you can share the most nationwide minutes."[68] Customers may add a line for only $4.99 with a two-year contract.

- **Sprint/Nextel** have "come together offering you more choice and flexibility. This powerful combination brings you access to more products, more services and more of what you need – to do more of what you want."[69] Sprint Fair and Flexible Plans feature "adjustable anytime minutes with no roaming charges and no huge overages."[70] Family plans allow the sharing of adjustable anytime minutes on two lines with no roaming charges.

- **T-Mobile** offers the "myFaves" calling plan, which "allows unlimited calling to your 5 favorite people. Any number. Any network."[71] Starting at just $39.99, customers receive "loads of Whenever minutes plus unlimited

[68] *See* http://www.ntelos.com/wireless/wirless.html. Click on NTELOS Promise button (accessed November 14, 2006).

[69] *See* http://www1.sprintpcs.com/explore/ueContent.jsp?scTopic=whySprint (accessed November 14, 2006).

[70] *Id.*

[71] *See* http://www.t-mobile.com/templates/generic.aspx?passet=Pln_Lst_MyFavesLrnDemo (accessed November 14, 2006).

nationwide calling to the five people who matter most. No nationwide long-distance or roaming charges on any calls."[72]

- **Verizon Wireless** has "America's most reliable wireless network."[73] Verizon's "Get In for only $9.99" plan allows customers with a Family Share Plan® (starting at $69.99 for monthly access for 2 lines) to get additional lines for just $9.99 per month.[74]

Q. HOW ARE RESIDENTIAL CUSTOMERS USING MOBILE WIRELESS SERVICES?

A. In its Tenth Report on Wireless Competition, the FCC observed:

> Once solely a business tool, wireless phones are now a mass-market consumer device. As the Economist magazine recently noted, "When you leave your house, you probably take your keys, your wallet and your phone." The overall wireless penetration rate in the United States is now at 62 percent, and more than 90 percent for the U.S. population between the ages of 20 and 49. According to one study, two-thirds of all households have at least one cellphone, with many having more than one.[75]

The FCC's observation is reinforced by the Synovate results articulated in more detail by Mr. Newman, in which the survey reveals over 76 percent of Virginia households in the Verizon service territory subscribe to wireless phone service, with almost 66 percent of those subscribers having two or more phones.

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[72] *Id.*

[73] *See* http://www.verizonwireless.com/b2c/bestNetwork/itsthenetwork.jsp (accessed November 14, 2006).

[74] *Id.*

Q. PLEASE DESCRIBE THE GROWTH IN WIRELESS USAGE.

A. Nationally, from December 1999 to December 2005, the number of wireless subscribers grew from 79.7 million to over 203 million.[76] Through mid-year 2006, the number of wireless subscribers had grown to over 219.4 million.[77] According to a study cited by the FCC, 23 percent of voice minutes in the U.S. in 2003 were wireless, up from 7 percent in 2000.[78] As shown in Figure 8 below, monthly minutes of use increased from 119 in 1995 to 584 in 2004. According to the CTIA, total wireless minutes of use grew to over 1.4 trillion in 2005, representing annual growth of 35.8% since 1991.[79] As the Figure illustrates, growth in minutes has occurred in conjunction with a dramatic decline in average revenue per minute.

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[75] Exhibit Misc. West-5. FCC Tenth Wireless Competition Report p. 72 (internal citations omitted) (September 30, 2005).

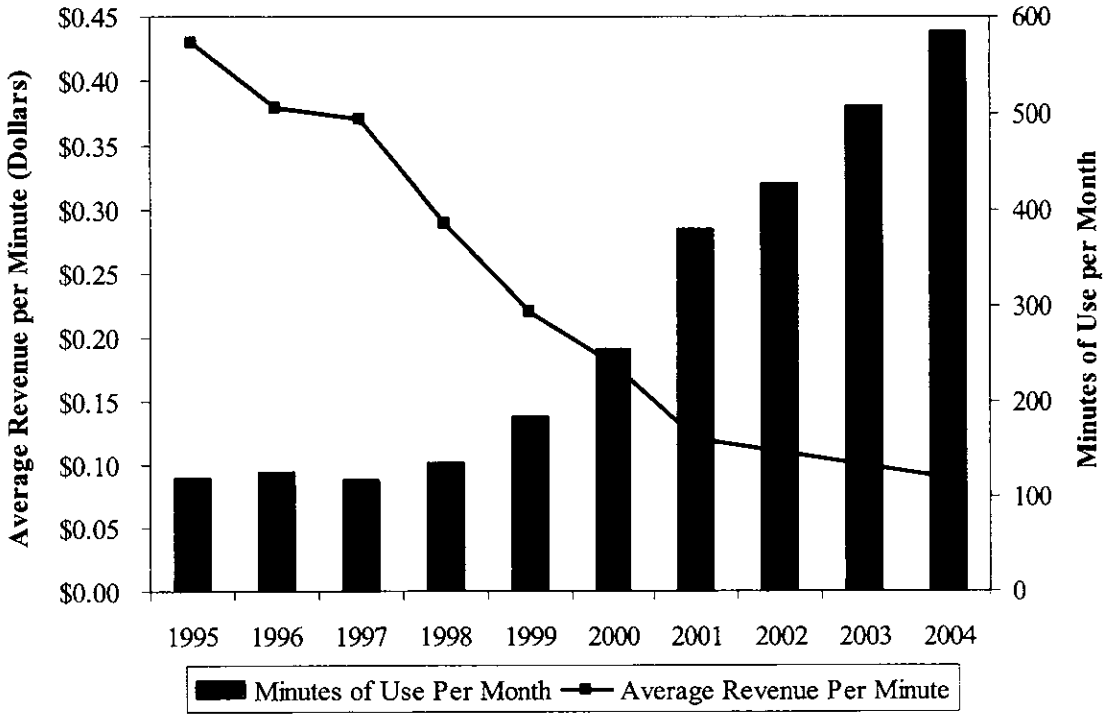
[76] FCC, Local Telephone Competition: Status as of December 31, 2005, Table 14.

[77] *See http://www.ctia.org/research_statistics/statistics/index.cfm/AID/10202* (accessed November 29, 2006).

[78] FCC, 9th Annual CMRS Competition Report, WT Docket No. W04-111, Rel. September 28, 2004, at ¶213, (citing Merrill Lynch, Global Securities Research & Economics Group, March 15, 2004 at 40).

[79] CTIA, Semi-Annual Wireless Industry Survey, Year End 2005 at http://files.ctia.org/pdf/CTIAEndYear2005Survey.pdf (accessed November 29, 2006).

Figure 8
Wireless Minutes of Use per Month and Average Revenue per Minute

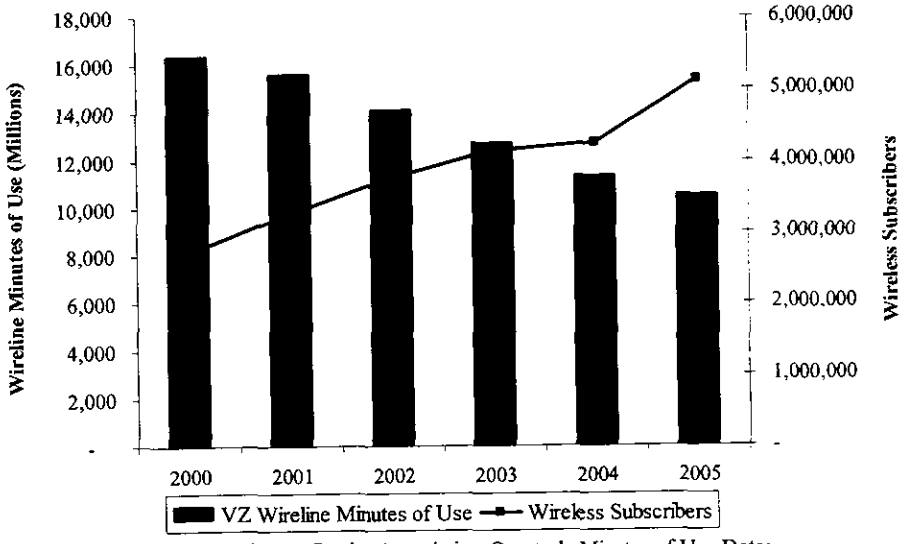


Source: FCC, Tenth Annual CMRS Competition Report, Table 8.

Virginia has experienced similar rapid growth in wireless usage and subscribers. This growth has occurred in conjunction with (and has undoubtedly contributed to) a decline in wireline usage.

Figure 9 below shows Virginia wireless subscribers and Verizon's Virginia wireline minutes of use. As the Figure illustrates, between 2000 and 2005, wireless subscribers in the Commonwealth increased 89 percent while wireline minutes of use declined 36 percent.

Figure 9
Virginia Wireless Subscribers and Wireline Minutes of Use

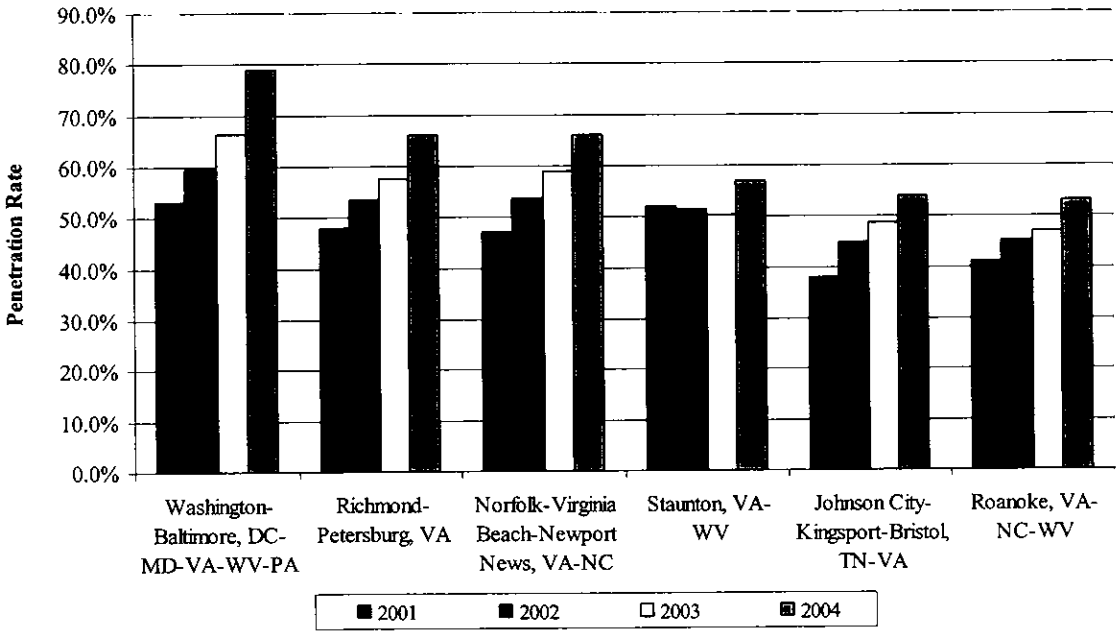


Source: FCC, National Exchange Carrier Association, Quarterly *Minutes of Use Data*; FCC, Local Telephone Competition: Status as of December 31, 2005, Table 13.

The increase in wireless subscribers is not concentrated in any one area of the Commonwealth, but is occurring throughout Virginia.

Figure 10 below displays wireless penetration rates for six Economic Areas in the Commonwealth (as reported by the FCC).[80] As the figure illustrates, wireless penetration is growing in each of these areas. The average penetration rate in these areas reached 63 percent in 2004.

Figure 10
Wireless Penetration Rates in Virginia Economic Areas



Source: FCC, CMRS Competition Reports, Seventh Annual Report-Tenth Annual Report.

[80] The FCC uses in its analysis "Economic Areas" which consist of one or more economic nodes – metropolitan areas or similar areas that serve as centers of economic activity – and the surrounding counties that are economically related to the nodes.

Q. IS THERE EVIDENCE THAT THE GROWTH IN WIRELESS USAGE HAS AFFECTED VERIZON'S WIRELINE USAGE IN VIRGINIA?

A. Yes. At the same time wireless usage has increased (as shown in Figure 10 above) Verizon's wireline usage in Virginia has declined steeply over the past four years in particular (as shown in Figure 11 below):

Figure 11
Calls per Verizon Wireline per Year in Virginia [BEGIN CONFIDENTIAL]

[END CONFIDENTIAL]

Q. WHY ARE MOBILE WIRELESS SERVICES INCREASINGLY USED IN LIEU OF WIRELINE SERVICE?

A. In its Tenth Wireless Report, the FCC explains that trends depicting increased use of wireless over wireline

> appear to be due to the relatively low cost, widespread availability, and increased use of wireless services. As we discussed in past [FCC] reports, a number of analysts have argued that wireless service is cheaper than wireline, particularly if one is making a

long-distance call or when traveling. As one analyst put it more recently, "For many customers, wireless is cheaper with greater utility than wireline – in contrast to perceptions, wireless prices have indeed been falling, making it more competitive with wireline."[81]

Q. IS WIRELESS SERVICE USAGE EXPECTED TO GROW AMONG RESIDENTIAL CUSTOMERS?

A. Yes. Growth in demand for mobile wireless services is likely to continue for at least three reasons. First, the proliferation of wireless services that has occurred without interruption over the past 20 years shows no signs of abating. Second, as the FCC noted in its Tenth Wireless Competition Report, a growing number of young people, such as those living on college campuses, are using wireless phones instead of wireline phones, and as these customers graduate they are likely to continue using their wireless phones. Finally, consumers are likely to become even more willing to give up wireline phones as they grow more accustomed to the advantages of wireless services such as greater convenience, more portability and more features.

Q. IS IT NECESSARY FOR A LARGE PROPORTION OF CUSTOMERS TO "CUT THE CORD" IN ORDER FOR WIRELESS SERVICE TO BE CONSIDERED A COMPETITIVE ALTERNATIVE TO WIRELINE?

A. Absolutely not. As noted above, telephone services are now sold as a bundle, and consumers look at the overall price of the bundle in making their purchase decisions, regardless of the platform over which it is provided. In setting prices for their bundles of wireline services, companies like Verizon take into account that changes in the overall bundled price will cause the demand for wireless to

[81] FCC Tenth Wireless Competition Report, September 30, 2005 at 74 (quoting Frank Governali, *Global Telecom Weekly, Goldman Sachs, Equity Research, Aug. 9, 2004, at 2).*

increase and the quantity of wireline services consumed (and thus the revenues from such services) to fall. This fact, as further explained by Dr. Taylor, constrains wireline prices despite the fact that a relatively small (but ever growing) proportion of wireless customers actually give up their wireline services altogether. If a substantial number of wireline customers would increase wireless usage in response to wireline price increases (as is clearly the case based on the facts presented above), wireless and wireline are properly considered competitive alternatives.

As the FCC observed in its Tenth Wireless Competition Report:

> Even when not "cutting the cord" completely, consumers appear increasingly to choose wireless service over traditional wireline service, particularly for certain uses. ***A recent study showed that one-third of all households receive more than half of their calls on wireless phones, with 9 percent receiving almost all their calls wirelessly.*** In the Ninth Report, we discussed the pressures that wireless growth is placing on companies which offer wireline services. In 2004 these trends continued, as the number of landlines declined by around 1.2 percent quarterly in the second and third quarters of 2004, and wireline long distance voice revenues continued to erode. At the end of 2004, there were more wireless subscribers than wireline in the United States – 176 million access lines versus more than 184 million wireless subscribers. In response, some incumbent wireline companies are beginning to focus more on their fast-growing wireless businesses, where, nationwide, service revenues grew by 12 percent in 2004. One wireline executive remarked, "We are not looking at ourselves as a phone company anymore."[82]

Q. TO WHAT EXTENT ARE RESIDENTIAL CUSTOMERS COMPLETELY "CUTTING THE CORD"?

A. A growing number of them are cutting the cord, and many more are expected to do so in the future. While the results of "cord-cutting" studies vary, all show

[82] *Id.* at 73 (emphasis added).

significant annual increases in the numbers of households using only wireless phones. The FCC cited a 2004 survey done for the Centers for Disease Control that indicated that 5.5 percent of adults lived in households with only wireless phones in the second half of 2004, up from 4.4 percent in the first half of 2004 and 2.8 percent in 2003.[83] More recent studies show even higher rates of cord cutting. For instance, NPD Group, a market-information company, reports that 12 percent of cell phone users surveyed in January and February 2006 reported that cell phones were their only phone. About 42 percent said they also have a land-line phone but they use their cell phones most. Only 43 percent said they still use their land-line phones as the primary phone.[84]

The independent survey results discussed by Mr. Newman reveal that over 80 percent of households with a wireless phone make most of their calls with the wireless device, and provide their cell phone number 64 percent more often than they provide their wireline phone number. In fact, even though that survey intentionally excluded cord-cutters from the sample, the evidence still revealed that almost half of all households with wireless phone service have someone in the household that considers his or her wireless phone to be the primary phone.

Forrester Research found that cord-cutters now constitute 8 percent of all U.S. households with a mobile phone, representing 96 percent growth in cord-cutters

[83] *Id.* at 73.

[84] NPD Group, Wireless Bulletin, *Landline Replacement is Actually Happening*, http://wireless.npd.com/bulletin_landline_replacement.html (accessed November 29, 2006).

since 2004.[85] This means that one in thirteen mobile households – that is, more than 6 million households and nearly 6 percent of the total population – now rely exclusively on a mobile phone.[86]

In-Stat/MDR reports that approximately 9.4 percent of wireless subscribers have already "cut the cord," and predicts that this percentage will increase to between 23 and 37 percent by 2009, with 30 percent being the most likely scenario.[87] A recent study in the American Journal of Public Health found that in the first half of 2005, 6.7 percent of adults lived in households with only wireless telephone service. The study found this to be a statistically significant increase from 4.5 percent in the first half of 2004. The study notes that even in 2003, wireless telephones were used for 43 percent of all long distance calls, and that more minutes per person per month were logged on wireless telephones than on land-line telephones. The authors of that study conclude, "It is perhaps not surprising, then, that some wireless telephone users have substituted a wireless telephone for their residential landline telephone."[88]

There is no question that cord-cutting has had an impact on wireline companies. As THE WALL STREET JOURNAL recently reported,

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[85] Forrester Research, "*Cord-Cutting Grows Into the US Mainstream*," March 30, 2006.

[86] *Id.*

[87] In-Stat/MDR, "*Cutting the Cord: Consumer Profiles and Carrier Strategies for Wireless Substitution*," October 2005.

[88] Blumberg, Stephen J., Luke, Julian V. and Cynamon, Marcie L., "*Telephone Coverage and Health Survey Estimates: Evaluating the Need for Concern About Wireless Substitution*," American Journal of Public Health, Volume 96; Issue 5, May 1, 2006.

> The shift away from land-line phones has been particularly painful for phone companies like AT&T Inc. and Verizon Communications Inc., which have lost millions of their wired customers. These losses have only partially been mitigated by the large interests that both companies hold in wireless companies. At the same time, the cord-cutting trend doesn't bode well for telephone companies' high-speed Internet businesses.

A Forrester Research analyst echoed these sentiments: "The possibility that phone companies can win these customers back is pretty low. Cord-cutting and cable modems are a killer for them."[89]

Q. DO YOU EXPECT THAT THE PERCENTAGE OF CORD-CUTTERS WILL INCREASE OVER TIME?

A. Yes. JP Morgan forecasts total wireline access line losses of 2.4 percent per year over the next five years due to wireless and broadband substitution. JP Morgan estimates that complete wireless replacement of the wireline phone will reach 20.3 million primary lines, or 18 percent of telephony households by 2010, driving primary access line losses of 1.4 percent per year. Additionally, wireless replacement will claim 8.5 million non-primary access lines, which along with broadband, will drive non-primary access line losses of 11.7 percent per year. Thus, overall by 2010, wireless lines will have replaced about 29 million landlines, representing line substitution of 23 percent.[90] This should come as no surprise given that currently in the 18-24 demographic, nearly a quarter of this age group states they have no landline phone.[91]

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[89] The Wall Street Journal, "*More U.S. Households are Ditching Landline phones for Wireless.*" March 31, 2006.

[90] JPMorgan, "*Telecom Services/Wireline, State of the Industry: Consumer,*" January 13, 2006.

[91] NPD Group, Wireless Bulletin, *Landline Replacement is Actually Happening,* http://wireless.npd.com/bulletin_landline_replacement.html (accessed November 29, 2006).

Q. WHAT OTHER DEVELOPMENTS DO YOU EXPECT TO SEE IN THE MOBILE WIRELESS SECTOR?

A. Among other things, wireless service providers will continue to upgrade the wireless networks and will offer an even wider array of services. Wireless carriers also have increased the quality of wireless services and expanded their geographic reach to the point where customers generally can choose whether to make the next call on the wireless or wireline phone at their home or small office.[92] The FCC noted in its Ninth CMRS Competition Report that carriers now compete on quality and have invested tens of billions to ensure that consumers get more reliable wireless service.[93] Carriers have invested a cumulative $174 billion in their networks and increased the number of cell sites to nearly 176,000, up 75% from the year 2000 alone.[94] Cingular, for example, is making substantial investments in denser cell sites and better quality networks, and now prominently advertises that it has the "fewest dropped calls" of any cellular provider.[95] As a result of the wireless providers' emphasis on quality, capital spending in the wireless sector is expected to increase in 2007 and 2008, driven primarily by

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[92] C. Wheelock, In-Stat/MDR, *Cutting the Cord: Consumer Profiles and Carrier Strategies for Wireless Substitution,* (Feb. 2004), at 60.

[93] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services*, WT Docket No. 04-111, Ninth Report (rel. Sept. 28, 2004), ¶ 148 (available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-216A1.pdf).

[94] CTIA-The Wireless Association, *Background on CTIA's Semi-Annual Wireless Industry Survey* (2005), at 8 ("Reported Wireless Minutes of Use Exceed One Trillion in 2004"), (available at http://files.ctia.org/pdf/CTIAYearend2004Survey.pdf).

[95] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services*, WT Docket No. 04-111, Ninth Report (rel. Sept. 28, 2004), ¶ 149 (available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-216A1.pdf).

research and the continued deployment of the 3rd Generation ("3G") broadband wireless technologies. With the rollout of 3G wireless technology, wireless carriers are now able to provide color, full motion video and Internet access to mobile phones. This technology also offers broadband access to the Web. Moreover, the FCC auctioned a significant block of AWS (advanced wireless services) spectrum, covering 1,122 licenses (of which 1,087 were won by bidders), for both fixed and mobile services in September 2006. This spectrum will allow entirely new carriers with new business models to enter the market. The Spectrum consortium has gained significant license assets which will help roll out new services to compliment the mobile offerings of Sprint-Nextel and provide the cable companies Comcast and Cox with wireless capabilities.[96] The entry of these carriers into the Virginia market will only accelerate the trend of cord-cutting and wireless substitution. A perfect example of this is Leap Wireless (parent company of Cricket Wireless), who also gained wireless spectrum in Virginia with winning bids in the AWS auction. Cricket customers use their wireless service differently than the average mobile phone user. Based on company surveys, Cricket customers talk an average of 1,500 minutes per month – more than double the wireless industry average. And 52 percent of Cricket customers have "cut the cord" and rely solely on Cricket for their phone service.[97]

[96] *See* CED Magazine, "*FCC AWS Auction Ends at $13.9B*," September 19, 2006.

[97] *See* Leap Wireless web site at: http://www.leapwireless.com/l1_our_cricket_service.htm (accessed November 29, 2006).

c. Broadband Competition

Q. HOW DO BROADBAND SERVICES COMPETE WITH WIRELINE SERVICE?

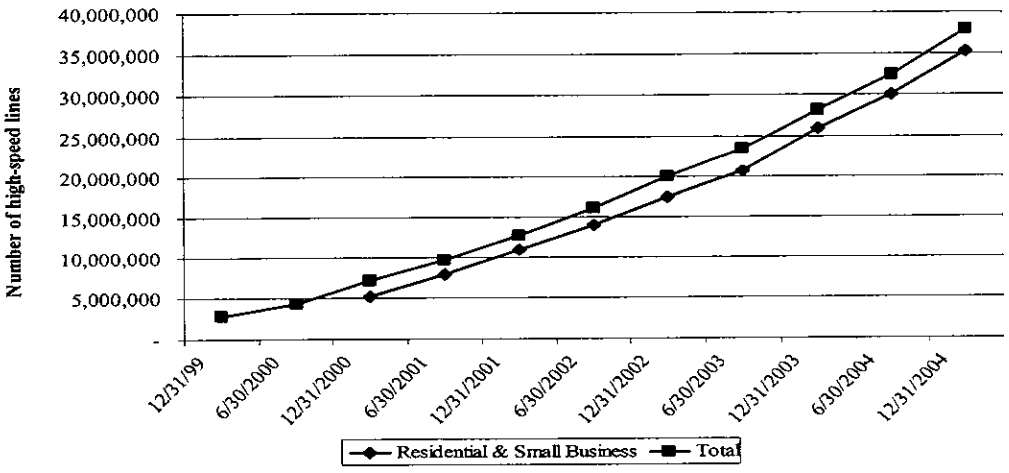
A. Wireline broadband services, which include DSL, cable modem and fiber, provide another technological platform for intermodal competition. These services compete with wireline data services by providing a platform consumers can use to access "by-pass" VoIP services provided by companies like Vonage. They also compete by replacing dialup connections to the Internet and by enabling electronic communications that would have otherwise been made using voice services on the traditional wireline network. The proliferation of the Internet has changed the way individuals communicate. While the Internet was initially used to share research between universities throughout the world, it is now widely and routinely used by households and small businesses for day-to-day communications. A broadband connection makes the Internet experience faster and more reliable. Increasing broadband usage, prompted in large part by competition between DSL and cable modem providers, has led to greater use of the Internet as an alternative to voice services through such means as e-mail and instant messaging.

Q. HOW HAS BROADBAND USAGE INCREASED?

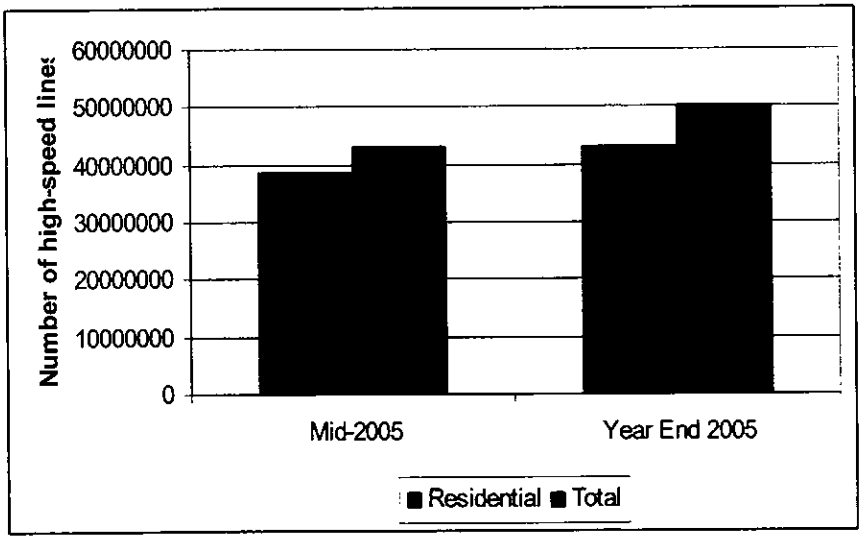
A. As seen in Figure 12 below, the number of residential and small business high speed lines in the United States has grown from around 5.2 million lines in 2000 to well over 42 million lines in 2005:

Figure 12

U.S. Broadband Line Growth



Source: Federal Communications Commission Reports, High Speed Services for Internet Access: Status as of June 30, 2000 through 2004 and December 31, 2000 through 2004.
Note: Data on residential & small business not available for 12/31/1999 and 6/30/2000.



Source: FCC Reports, High-Speed Services for Internet Access: Status as of June 30, 2005 and December 31, 2005.

Broadband subscribership increased 18 percent—that is, from 42.4 million to 50.2 million lines—in the six-month period from June 2005 to December 2005 alone.[98]

In a recent report, Park Associates discussed the effects of increased broadband usage on the narrowband market:

> The number of narrowband subscribers peaked in 2001 and has been declining at an accelerated pace for the past several years. In 2005 alone, narrowband service providers lost 7 million subscribers to broadband services. Consumer data collected through various Park Associates surveys indicate that this trend will continue. The percentage of narrowband subscribers planning to upgrade to broadband services in the next 12 months increased to 24% according to *Bundled Services and Residential Gateways*, a Q1 2006 survey, compared to 18% in Q4 2004. We forecast that another 7 million narrowband subscribers will sign up for broadband services in 2006.[99]

Among the reasons cited for the forecasted increase in broadband subscribers are aggressive promotional price plans, higher speeds and discounted bundles.[100] Park Associates also observed that "[t]he momentum behind the broadband market remains very strong. In 2005, the industry added 10 million new subscribers, compared to 8 million in 2004."[101]

Independent survey evidence reinforces the FCC's data, as Mr. Newman observed that over three-quarters of Virginia households (in Verizon's territory) access the Internet, and over 70 percent of those access it via some type of high speed or broadband connection.

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[98] FCC Report, High Speed Services for Internet Access, Status as of December 31, 2005, p. 1.

[99] Park Associates, "*Broadband Market Updates: Beyond Bandwidth," Second Quarter 2006*, p. 2.

[100] *Id.*

[101] *Id.* at 5.

Q. ARE BROADBAND SERVICES PROVIDERS REASONABLY MEETING THE COMMUNICATIONS NEEDS OF RESIDENTIAL CUSTOMERS IN VERIZON'S VIRGINIA SERVING AREA?

A. Yes. Broadband access is widely available to residential customers throughout the Commonwealth (and certainly in all parts of Verizon's service area). As of December 31, 2005, there were 23 ADSL providers, 11 coaxial cable providers, and a total of 59 distinct high-speed line providers serving residential customers in Virginia. This represents an increase from 10 ADSL providers, 8 coaxial cable providers and a total of 25 high speed line providers in just one year.[102] Today, 98 percent of zip codes in Virginia have at least one broadband provider with lines in service; 94 percent of Zip Codes have at least two such providers and 70 percent, or more than two-thirds, have four such providers.[103]

High speed DSL connections are available to 67 percent of the households to whom ILECs could provide local telephone service, and high-speed cable modem service is available to 96 percent of the households to whom cable system operators could provide cable TV service.[104]

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[102] FCC, "*High-Speed Services for Internet Access: Status as of December 31, 2005*," Table 8.

[103] *Id.* Table 17.

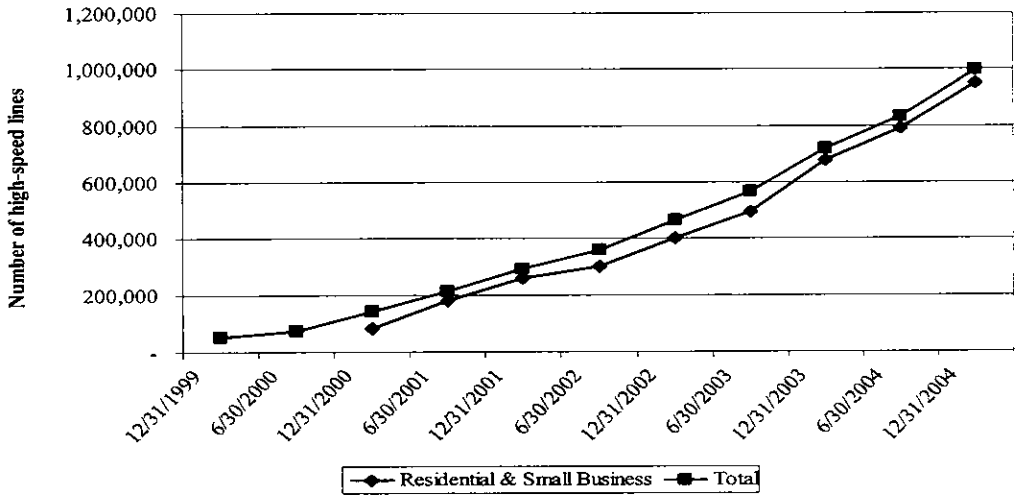
[104] FCC, "*High-Speed Services for Internet Access: Status as of December 31, 2005*," Table 14.

Q. HAS BROADBAND SUBSCRIBERSHIP GROWN IN VIRGINIA?

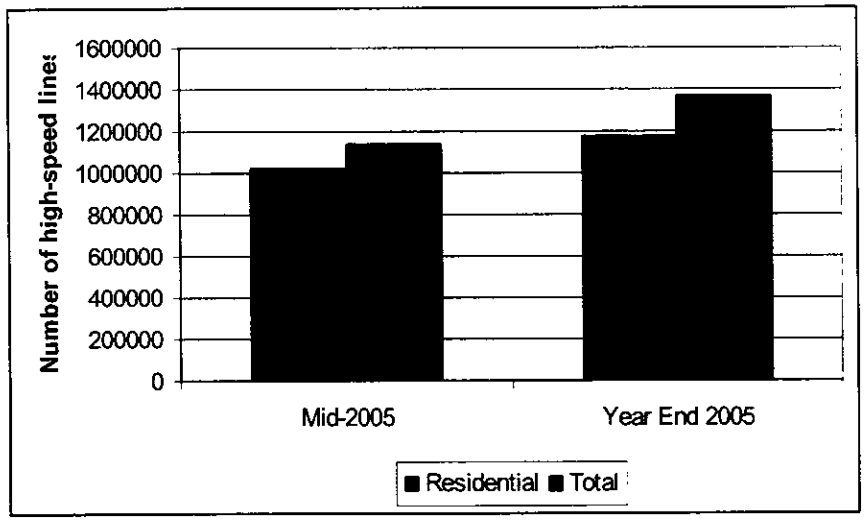
A. Yes. As seen in Figure 13, total broadband lines in Virginia have grown from around 50,000 in December 1999 to over 1.3 million in December 2005. Residential and small business lines similarly experienced dramatic growth.

Figure 13

Virginia Broadband Line Growth



Source: Federal Communications Commission Reports, High Speed Services for Internet Access: Status as of June 30, 2000 through 2004 and December 31, 2000 through 2004.
Note: Data on residential & small business not available for 12/31/1999 and 6/30/2000.

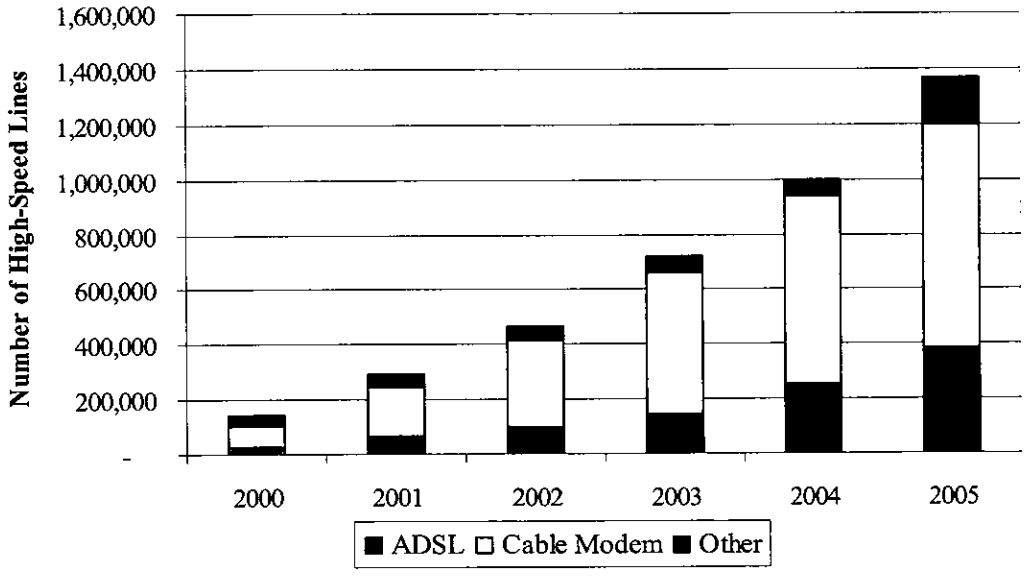


Source: FCC Reports, High-Speed Services for Internet Access: Status as of June 30, 2005 and December 31, 2005.

Q. WHICH PROVIDERS SERVE RESIDENTIAL CUSTOMERS WITH BROADBAND SERVICES?

A. While both cable companies and LECs provide broadband service to residential customers, the cable companies serve a far greater percentage of those customers than the LECs do. As of December 2005, cable modem accounted for about 60 percent of the over 1.3 million high-speed lines serving Virginia, while ADSL accounted for only 28 percent.[105] These data, as well as the growth in various technologies since 2000, are illustrated in Figure 14 below:

Figure 14
Virginia High-Speed Lines by Technology



Source: FCC, High-Speed Services for Internet Access, Status as of December 31, 2000-2005.

NOTE: Other includes SDSL, traditional wireline, fiber, satellite, fixed wireless, mobile wireless and power line.

[105] The remaining 12 percent is served by other types of technology. FCC, *High Speed Services for Internet Access, Status as of December 31, 2005*, Table 9.

Q. WHAT IS THE COMPETITIVE SIGNIFICANCE OF THE FACT THAT CABLE MODEM SERVICES ARE OUTPACING DSL SERVICES IN THE MARKETPLACE?

A. As noted above, consumers increasingly purchase communications services in bundles that include data and/or video services. Data services are an especially important part of the bundle because they are "sticky" – that is, consumers are reluctant to change their data provider, in part because (unlike telephone numbers) e-mail addresses are not portable across carriers. The fact that cable companies have built a substantial lead on LECs in general (and Verizon in particular) gives them an important competitive advantage as consumers increasingly switch to bundled services. As Dr. Taylor demonstrates, cable companies are winning large and growing market shares as they roll out cable telephony in new areas and, over a very brief period of time, persuade customers to drop their LEC-provided telephone service in favor of adding voice to their existing data and/or video bundles.

Q. TO WHAT EXTENT ARE COMMUNICATIONS VIA THE INTERNET, SUCH AS E-MAILS AND INSTANT MESSAGING, DISPLACING USE OF THE TRADITIONAL WIRELINE NETWORK?

A. As people increasingly communicate via the Internet, use of wireline services declines. Internet communication has proliferated in the last several years. According to a recent survey by the Pew Internet & American Life Project, by early 2006, fully 73 percent of Americans, or 147 million people, were Internet users.[106] On a typical day 97 million American adults use the Internet.[107]

[106] Pew Internet & American Life Project, *Internet Activities*, April 26, 2006, available at http://www.pewinternet.org/trends/Internet_Activities_4.26.06.htm.

Another recent survey found that the average American Internet user spends three hours a day online, with much of that time devoted to work and more than half of it to communications.[108]

Another Pew survey found:

> "In principle, internet users have high regard for the internet as a tool of communication; 85 percent of both men and women say they consider the internet to be a good way to interact or communicate with others in their everyday lives." An examination of available data corroborates this finding. Over 90 percent of Internet users use email. Likewise, over 80 percent use the Internet to communicate with friends and family. Over 40 percent send instant messages and greetings/invites, over 30 percent use text messaging and over 20 percent participate in chats or discussions.[109]

One source estimates that there are about nine billion e-mails per day in the United States alone.[110] Another source reports that 80 million people use IM in the United States, and about seven billion IMs are sent each day worldwide.[111] The Radicati Group, a Palo Alto, California, market research firm, predicts worldwide instant messaging revenue will grow from $142 million in 2005 to $365 million by 2009. IMs sent worldwide each day will grow from 11.4 billion in 2004

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[107] Pew Internet & American Life Project, *Daily Internet Activities*, April 26, 2006, available at http://www.pewinternet.org/trends/Daily_Internet_Activities_4.26.06.htm.

[108] San Jose Mercury News, *Survey Details U.S. Internet Use*, Dec. 30, 2004.

[109] Pew Internet & American Life Project, *How Women and Men Use the Internet*, December 28, 2005.

[110] *E-Mail and Records Management in the Legal Environment*, Legal Tech Newsletter, Nov. 14, 2003, cited in UNE Fact Report 2004, Oct. 2004, p. I-6.40.

[111] *AOL Announces That Instant Messaging Is More Popular Than Ever*, WEBPRONEWS, Aug., 2004, available at http://www.webpronews.com/news/ebusinessnews/wpn-45-20040824AOLAnnouncesthatInstantMessagingisMorePopularthanEver.html.

to more than 45.8 billion in 2008, while IM users will increase from 320 million in 2004 to 592 million in 2008.[112]

While it is difficult to determine exactly how much voice traffic has been displaced by these Internet technologies, it is clear that they have been used in lieu of a substantial number of wireline phone calls. In-Stat/MDR confirms that "[c]onsumers are using email and instant messaging in place of a phone call."[113] Furthermore, an analysis presented to the FCC in the Triennial Review Order proceedings indicates that

> if just 5 percent of [e-mail and IM messages] substitute for a 90 second voice call, this data traffic has displaced more than 10 percent of the voice traffic that would otherwise have been handled by the incumbents' networks.[114]

As broadband continues to grow, so does the use of these communication alternatives.

As discussed above in the context of wireless alternatives, the fact that consumers purchase bundles of voice services, and thus look at the overall price of those services, and conversely that companies set prices on the basis of overall revenues received from each customer for all services in the bundle, means that any communications technology that reduces usage of voice services – even if it does not displace them altogether – constrains the prices paid by consumers.

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[112] *See* New Orleans CityBusiness, *Fritz Esker; "Talk is cheap... Free instant messenger programs help business communicate,"* May 29, 2006.

[113] In-Stat/MDR, *State of the U.S. Carrier Market*, Oct. 2003, at p. 6.

[114] UNE Fact Report (2004), at pgs. I-6.

Q. ARE EMAILS AND IMs LIMITED TO THE WIRELINE BROADBAND NETWORK?

A. Not at all. An increasing number of wireless devices enable e-mailing and IM. BlackBerries, "smartphones," text messaging on mobile phones, and the newly arriving "3G" wireless services are blurring the boundaries between mobile voice and data services. According to data from the Pew Internet & American Life Project, 25 percent of Internet users log on using a wireless device.[115] The statistics are similar for wireless instant messaging, where Pew data reveal that 15 percent of IM users have instant messaged using a wireless device, such as a cell phone, PDA or wirelessly enabled laptop.[116] Other recent data show that about 65 million U.S. mobile subscribers, or about 35 percent, have used text messaging, and about 12 million, or 6 percent, have used mobile IM.[117] Individuals are also becoming increasingly comfortable with using their wireless handhelds for data services, which can be used in lieu of voice services. By mid-2004, more than 25 percent of US wireless subscribers were wireless data users - a 58 percent increase from the same period the previous year - with the average wireless user spending $2 per month on wireless data services.[118] Growth continued in 2005, when revenues from wireless data amounted to over

[115] Pew Internet & American Life Project, *Internet Activities*, April 26, 2006, available at http://www.pewinternet.org/trends/Internet_Activities_4.26.06.htm.

[116] Pew Internet & American Life Project, *How Americans Use Instant Messaging*, September 1, 2004.

[117] ZDNet Research, *Top activities among US wireless subscribers: text messages, photo messages, browsing news, buying ringtones*, May 11, 2006, available at http://blogs.zdnet.com/ITFacts/index.php?cat=19 (accessed November 29, 2006).

[118] Citing results from the Yankee Group's 2004 Mobile User Survey. *See* Rob McGann, *Wireless Data Revenues Top $4 Billion in 2004*, December 29, 2004 available at http://www.clickz.com/stats/sectors/wireless/print.php/3452871.

$8.58 billion, up from $4.6 billion in 2004 and a total of 48.7 billion text messages were sent in the second half of 2005 alone, a 97% increase from the second half of 2004, when 24.7 billion messages were sent.[119]

d. VoIP Providers

Q. HOW IS VOIP TECHNOLOGY USED IN THE RESIDENTIAL MARKET SEGMENT?

A. VoIP technology allows customers to make and receive local and long distance calls using adapters with ordinary telephone equipment and ordinary dialing patterns. VoIP is used in the residential segment in at least three different ways. First, as I described earlier, cable companies use IP-based technology over their own networks to provide "cable telephony" without requiring customers to subscribe to broadband service. Second, independent "bypass" VoIP providers, such as Skype, provide customers with an adapter that attaches to their existing telephone equipment and routes calls over the customer's broadband connection to the Internet. Finally, customers use software applications over their existing broadband (cable modem or DSL) connections to make calls from their computers over the Internet. Because VoIP requires only a broadband connection and a VoIP-enabled phone, residential customers in Virginia can literally subscribe to VoIP service from any provider in the world. The provider does not have to be physically located in Virginia for the customer to use the service, as would a conventional wireline voice service provider.

[119] ZDNet Research, *Wireless data services generated $8.58 bln in 2005*, April 8, 2006 available at http://blogs.zdnet.com/ITFacts/?p=10596.

Nationally, bypass VoIP providers[120] are enjoying impressive success. Skype, for example, allows customers to use their broadband-connected PC to call any number (wireless, wireline, VoIP, cable, RBOC, etc.) in the US and Canada for free. Skype was recently acquired by eBay, and has over 150 million downloads of its software globally. AOL, the country's largest Internet service provider, is now providing VoIP service,[121] and industry experts expect that other Internet companies will soon follow:

> These guys own the desktop, and the desktop is the highway out of your house. Anybody who's got real stickiness with their target audience can drop [a VoIP] application right into their code.[122]

Bernstein Research recently observed:

> If 2004 was the year that VoIP came onto the scene, then 2005 was when it truly became a viable consumer technology. In the span of just one year, VoIP went from having 1.15 million to 4.17 million subscribers, for an increase of more than 260%. Fourth-quarter 2005 saw a 27% sequential increase in the total number of VoIP subscribers.[123]

Similarly, Park Associates has noted:

> Unquestionably, VoIP has hit prime time. All of the major cable providers as well as all of the incumbent telephone companies now offer VoIP. If this fact were not proof enough, eBay's acquisition of

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[120] A "bypass" VoIP provider offers service over a customer's broadband connection thereby "bypassing" the traditional telephone network. These VoIP providers use the Internet to transport traffic and do not need to invest in any local capital equipment. It is also important to realize that a Cable MSO (Multi-System Operator), despite using VoIP, is not a bypass provider, since the voice traffic travels only on their private IP networks and never touches the Internet.

[121] AOL Press Release, *America Online Introduces AOL® Internet Phone Service* (Apr. 7, 2005).

[122] C. Wilson, *AOL Helps Usher in VoIP's Growth Spurt*, TELEPHONY (Mar. 14, 2005), at 10.

[123] Bernstein Research Weekly Notes, April 28, 2006,"*Quarterly VoIP Monitor: Adoption Still Accelerating,*" p. 1.

Skype for $2.5 billion left no doubt that VoIP technology has finally come of age.[124]

Q. ARE VOIP SERVICES PROVIDERS REASONABLY MEETING THE COMMUNICATIONS NEEDS OF RESIDENTIAL CUSTOMERS IN VERIZON'S SERVING AREA?

A. Yes. Since bypass VoIP is Internet-based and providers can literally provide service from anywhere, it is impossible to determine all of the providers serving customers in Virginia. However, based on a review of the VoIP providers' web sites, it is clear that at least the following providers make Virginia-based area codes (*e.g.*, 276, 434, 540, 571, 703, 757, and 804) available to residential customers in Virginia: at&t, Lingo, Net2Phone, SunRocket, Packet8, The Minute Buster and Vonage.

Moreover, Virginia households surveyed in Verizon's territory revealed that over half are aware of VoIP technology, and 4 percent subscribe to a VoIP service. However, the survey focused only on subscribers with an NPA-NXX belonging to Verizon or other local Virginia service providers, which means that the survey evidence likely understates the percentage of VoIP users in Virginia. As I explained earlier, I believe many VoIP customers take on telephone numbers from another area of the country, or even the world, that would not reflect a Virginia NPA-NXX, in order to take advantage of local calling to family or friends located in another part of the world. Therefore, Mr. Newman's survey analysis would exclude any VoIP user in Virginia utilizing a non-Virginia NPA-NXX.

[124] Park Associates, "*Digital Voice Communications in the Home*," First Quarter 2006, Data Points p. ii.

Q. PLEASE PROVIDE A PROFILE OF SOME OF THE VOIP PROVIDERS SERVING RESIDENTIAL CUSTOMERS IN VIRGINIA.

A. **at&t** offers residential customers in Virginia its CallVantage plans. The CallVantage Service plan, priced at $29.95, includes unlimited local and long distance calling in the United States and to Canada, and numerous calling features; the CallVantage Local plan, priced at $19.95, includes local unlimited calling, long distance calls for $.04 per minute and calling features.[125]

Lingo is a subsidiary of the McLean, Virginia-based Primus Telecommunications Group. With more domestic and international coverage than any of the major VoIP providers in the U.S., Lingo residential customers can select U.S. phone numbers from over 300 major markets, and international phone numbers from cities in 15 foreign countries. Lingo offers unlimited local and long distance calls anywhere in the U.S., to Canada, and to Western Europe for $21.95 per month.[126] The service includes over 25 calling features.

Net2Phone provides low-cost, high-quality, retail Voice over IP services, either directly or through partners. In February 2006, it agreed to merge with IDT Corporation, an international telecom, entertainment and technology company. Net2Phone says it is "[r]ecognized as the first company to bridge the Internet with the public switched telephone network," and "currently routes millions of minutes daily over data networks, saving consumers and businesses up to 90% off

[125] *See* http://www.usa.att.com/callvantage/index.jsp (accessed June 29, 2006).

[126] *See* http://www.lingonews.com/aboutlingo.html (accessed November 30, 2006).

traditional long distance rates."[127] It offers residential customers in Virginia its VoiceLine service, which the company describes as

> a new service that allows residential or small business customers to use their broadband Internet connections with a variety of devices or software programs to make and receive phone calls, all for a significant savings over PSTN (Public Switched Telephone Network) calls with traditional carriers.[128]

Residential customers can choose from a number of VoiceLine plans including: the Unlimited Calling plan for $29.99 per month; the 500 minutes to Europe plan for $19.99 per month; the 500 minutes to Asia plan for $24.99 per month; or the 500 minutes to the U.S. and Canada plan for $14.99 per month.[129]

Packet 8: 8X8, Inc., a Santa Clara, California-based firm, develops and markets telecommunications services for VoIP applications. Products and services offered by 8X8 are Packet 8 broadband voice over IP and Packet 8 Virtual Office Business Telephone Service. Packet 8 residential plans with unlimited U.S. and Canada calling plans start at $19.99 per month. Features included are voicemail, call waiting, caller ID with name, and more.[130]

SunRocket, based in Virginia, currently serves Fredericksburg. With more than 100,000 current subscribers, SunRocket is the fastest VoIP provider to reach the

[127] *See* http://web.net2phone.com/about/company/ (accessed June 29, 2006).

[128] Net2Phone "*VoiceLine Residential Voice Over IP Telephone Service User's Guide*," 2005, p. 1.

[129] *See* http://www.net2phone.com/consumer/voiceline/overview.asp (accessed June 29, 2006).

[130] *See* http://ordervoip.packet8.net/about/uniden.asp (accessed November 30, 2006).

100,000 mark, and is the second fastest growing VoIP company in the nation.[131] SunRocket offers "All Inclusive" Annual and Monthly plans that allow unlimited local and long-distance calling, over 12 built in features, Enhanced voicemail, and bonus international calling for $199 per year, and $24.95 per month, respectively.[132] It also offers a "Limited Edition" plan that allows 200 minutes of calling to the United States and Canada, Puerto Rico, and "SunSpot" destinations, and over 12 built in features for $9.95 per month.[133]

Vonage, reputed to be the leading broadband telephony provider in the United States, adding subscribers at a rapid pace, has surpassed 2 million lines in service,[134] a 412 percent increase over the 390.6 thousand lines in service it reported as of year-end 2004. Vonage sells its service on the web and through national retailers including Best Buy, Circuit City, Wal-Mart and Target.[135] Vonage offers its Residential Premium Unlimited calling plan, which for $24.99 per month, provides unlimited local and long distance calling anywhere in the United States, Canada, Puerto Rico and select European cities, a host of vertical features, a free phone adapter, competitive international rates and a money back guarantee.[136] In Virginia, Vonage announced the expansion of area code

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[131] Michael Zitz, The Free Lance, "*Ring in a New Era, Voice Over Internet Protocol Calling Service Launched Locally,*" May 27, 2006.

[132] *See* http://www.sunrocket.com/services/plans/ (accessed June 29, 2006).

[133] *Id.*

[134] *See* PRNewswire – FirstCall, "*Vonage Crosses 2 Million Line Mark,*" (September 5, 2006).

[135] *Id.*

[136] *See* http://www.vonage.com/services_premium.php (accessed June 29, 2006).

offerings in Virginia on March 1, 2006 and Michael Tribole, president of Vonage America, stated,

> Vonage's further expansion into Virginia offers the state's residents choice when it comes to selecting a cost-effective phone service. Vonage is giving people in Virginia a great deal: Flat and low monthly rate calling plans that include the same features as traditional phone carriers and many more that are unique to Vonage such as area code selection and mobility.[137]

Vonage is very focused on acquiring new customers. It spent $243.4M purely on advertising during 2005 and expected to spend between $360M and $380M in 2006.[138]

Q. DO VOIP PROVIDERS OFFER VOICE SERVICES AT RATES THAT ARE COMPETITIVE WITH VERIZON'S WIRELINE SERVICES?

A. Yes, as I have just described them, the plans offered by VoIP providers are typically priced lower than ILEC unlimited local and long distance calling packages, and include many of the basic features that wireline circuit-switched telephony offers. In fact, as illustrated above, VoIP providers also make available advanced features that are not available from ILEC switches, such as the ability to choose any area code in the nation, the ability to access e-mail sound attachments, the ability to have incoming calls ring simultaneously on their cell or office phone lines, telemarketer blocking that rejects calls from automated dialing computers, and call filtering that offers control over who can call at what hours. As a result, customers view VoIP service as a replacement for their telephone line. Approximately 50 percent of Vonage customers bring their old

[137] *See* Vonage Press Release, *Vonage® Expands Area Code Selection In Virginia*, March 1, 2006.

[138] *See* Vonage Holdings Corp, Form 10Q, filed 11/8/2006 for Period Ending 9/30/2006, at p. 20.

phone number when they sign up.[139] This substitution is driven in large measure by price third-party VoIP providers offer service at rates significantly below comparable RBOC prices and significant price degradation is becoming evident.

[139] J. Hodulik, *et al.*, UBS Investment Research, *The Vonage Story: The Who, What, Where, and How* (Nov. 24, 2003), at 5; A. Quinton, *et al.*, Merrill Lynch, *US VoIP Update: Competitive, Regulatory, and Other Issues* (Nov. 25, 2003), at 9.

As shown in Table 3 below, VoIP providers offer competitively-priced monthly calling plans that typically include unlimited anytime local and long-distance minutes:

Table 3
Virginia VoIP Plans

Provider	Plan	Area Codes or Counties Offered	Monthly Price	Anytime Minutes	Additional Minutes	Long Distance
(a)	(b)	(c)	(d)	(e)	(f)	(g)
Vonage	Premium Unlimited	703, 757, 804,540,571	$24.99	Unlimited	N/A	Included
Vonage	Basic 500		$14.99	500 & unlimited incoming	$0.039	Included
Vonage	Small Business Unlimited		$49.99	Unlimited	N/A	Included
Vonage	Small Business Basic		$39.99	1,500	$0.039	Included
at&t	CallVantage Service	571, 703, 757, 804	$29.99	Unlimited	N/A	Included
at&t	CallVantage Local		$19.99	Unlimited Local	N/A	$0.04
at&t	CallVantage 2-Line Plan[1]		$49.99	Unlimited (1st Line)	N/A	Included
Lingo	Link	Alexandria City, Arlington, Fairfax, Loudoun, Prince William, Stafford	$7.95	Unlimited In-Network	$0.03	Unlimited In-Network
Lingo	Basic		$14.95	500	$0.03	Included
Lingo	Unlimited		$19.95	Unlimited	N/A	Included
Lingo	Business Unlimited[2]		$49.95	Unlimited	N/A	Included
Net2Phone	US/Canada Unlimited	276, 434, 540, 571, 703, 757, 804	$29.99	Unlimited	N/A	Included
Net2Phone	US/Canada 500		$14.99	500	$0.039	Included
Net2Phone	VoiceLine Basic[3]		$8.99	Unlimited Inbound	N/A	$0.05
Sun Rocket	Limited Edition[4]	804, 757, 703, 571, 540, 434	$9.95	200	$0.03	Included
Sun Rocket	All Inclusive Annual[4]		$199 / yr	Unlimited	N/A	Included
Sun Rocket	All Inclusive Monthly[4]		$24.95	Unlimited	N/A	Included
Packet 8	Freedom Unlimited	Anywhere in VA w/ high-speed connection	$19.99	Unlimited	N/A	Unlimited
Packet 8	Freedom Unlimited Global[5]		$49.99	Unlimited	N/A	Unlimited
Packet 8	Virtual Office Unlimited Extension[6]		$39.99/ extension	Unlimited	N/A	Unlimited
Packet 8	Virtual Office Metered Extension		$19.99/ extension	250	$0.039	Included

Notes & Sources:

Provider web sites.

[1] CallVantage 2-Line plan includes unlimited faxing to the US and Canada. The second line comes with 500 long distance faxing and calling minutes per month.

[2] Lingo Business plans include 500 outgoing fax minutes. The Unlimited Business International plan includes calls to many international countries.

[3] Net2Phone VoiceLine Basic: Unlimited inbound calls & pay-as-you-go outbound calls.

[4] Sun Rocket plans include calls to US, Canada and Puerto Rico.

[5] Unlimited global plan includes unlimited calling to select countries in addition to local and long distance.

[6] A minimum of 3 extensions must be subscribed in order to activate this service.

Q. IS VOIP SUBSCRIBERSHIP EXPECTED TO GROW?

A. Yes, analysts predict continued strong growth in non-cable VoIP subscribership. They estimate that these non-cable VoIP providers are adding 400,000 subscribers per quarter, and will reach 8-10 million users by 2009.[140] As I show, broadband availability – the fundamental "gateway" to VoIP-based competition – is nearly ubiquitous in Virginia. Numerous broadband providers serve residential customers throughout the Commonwealth. Verizon also offers several forms of "stand-alone DSL" services in Virginia so that customers can purchase stand-alone Verizon DSL and telephone service from an independent VoIP provider. In a May 2006 study, IDC stated its

> belie[f] that the market for consumer VoIP services will continue to grow at a healthy clip through 2010 and beyond. This strength of this market during the forecast will be primarily driven by the cable MSOs that will use it to increase share and cherry-pick customers from incumbent telecom providers.[141]

IDC specifically forecasts that U.S. VoIP subscribers will grow from 4.25 million in 2005 to 40 million in 2010.[142] Park Associates predicts a more modest, but nonetheless substantial, increase in VoIP subscribers, stating that "[b]y 2010, there will be nearly 35m telephone centric VoIP subscribers, generating over US $13.5bn in annual revenues."[143]

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[140] Viktor Shvets & Andrew Kieley, Deutsche Bank, *VoIP: State of Play* (June 22, 2005), at 4, 6.

[141] IDC Market Analysis, "*U.S. Residential VoIP Services 2006-2010 Forecast and Analysis: Where There is Smoke, Is There Fire?*" May 2006, at p. 4.

[142] *Id.* at 5.

[143] Park Associates, "*Digital Voice Communications in the Home," First Quarter 2006, Data Points*, p. ii.

e. CLECs

Q. WHAT EMPIRICIAL EVIDENCE IS AVAILABLE TO SHOW THAT CLECS ARE PRESENT IN THE MASS MARKET AND ARE REASONABLY MEETING THE NEEDS OF RESIDENTIAL CUSTOMERS?

A. Evidence of CLEC presence in the mass market is demonstrated by the fact that CLECs currently serve a growing number of residential customers in Verizon's service area. It is also seen in the fact that CLECs have deployed their own facilities – and are physically present – in virtually all parts of Verizon's service area.

Exhibits VA-15 and VA-16 contain maps demonstrating that CLEC competition for telecommunications services is widespread and virtually ubiquitous throughout Virginia. These maps, one showing the Verizon service territory where CLECs serve customers through resale and Wholesale Advantage and the other showing the Verizon service territory where CLECs serve customers using facilities-based voice competition, provide a compelling picture of the pervasive nature of residential competition from CLECs alone throughout Verizon's service area.[144]

As shown in Tab 14 of each of the Regional Binders, there are at least **[BEGIN CONFIDENTIAL]** . **[END CONFIDENTIAL]** CLECs present in each of the ten MSAs and six non-MSA regions in Virginia served by

[144] Note: For the purposes of our analysis, Verizon's ILEC wire centers, and all of the demographics contained therein, were separated into various MSA and non-MSA regions ("Regions") as shown in Tab 3 of the Regional Binders. Since MSAs are defined by the Office of Management and Budget ("OMB") as groups of counties. Verizon's wire center boundaries do not match exactly to MSA boundaries. As a result, a small number of wire centers may visually appear in multiple Regions in the attached Exhibit maps. However, when calculating demographic, service availability, and competitive statistics, all data in these wire centers only appear in the wire centers assigned Regions as defined by Tab 3 of the Regional Binders.

Verizon that offers a competitive alternative to every one of Verizon's residential service offerings.[145]

Q. PLEASE DESCRIBE THE CLEC LINE COUNT DATA YOU HAVE GATHERED.

A. Tab 14 of each of the Regional Binders provides aggregate CLEC residential line count data for each MSA and non-MSA region in Verizon's service territory. The data include: (1) the number of Verizon's retail business access lines; (2) the number of wholesale lines purchased from Verizon and resold by CLECs to their retail customers; (3) the number of Wholesale Advantage lines purchased from Verizon by CLECs to provide service to their retail customers; and (4) an estimate of the number of lines served by CLECs entirely over their own facilities, as well as cases where they lease UNE loops but use their own switches. CLEC line counts are compared to Verizon retail line counts, with CLEC line counts expressed as a percentage of total wireline access lines. As discussed below, competition exists for residential services in every MSA and non-MSA region in Verizon's serving area in Virginia.

Q. WHAT IS THE SOURCE OF THE ACCESS LINE DATA PROVIDED IN THE REGIONAL BINDERS, TAB 14?

A. The sources of the data are as follows:

- Verizon's retail residential access lines are based on Verizon's internal retail customer billing record database;

[145] Tab 14 of the Regional Binders show the specific CLECs that operate in a particular MSA or non-MSA region, the means by which they are providing service (*i.e.*, resale, Wholesale Advantage or facilities-based (depicted by reference to E911 listings)), the residential services the various CLECs offer in the MSA (per their tariffs), and an estimate of collective CLEC competitive penetration for the particular MSA or non-MSA region.

- Residence resale and Wholesale Advantage access line data are tracked through Verizon's internal wholesale customer billing database; and

- Line estimates for facilities-based CLECs are based on E911 listings and in some cases on UNE-L counts – where competitors (e.g., NTELOS) do not report competitive listings in a manner that is captured by the Verizon administered E911 database.

Q. WHY DO YOU DESCRIBE THE NUMBER OF RESIDENTIAL LINES SERVED BY CLECS AND IDENTIFIED WITHIN THE E911 DATABASE AS "ESTIMATES?"

A. Verizon has no way to track the exact number of access lines (or equivalents) a CLEC serves over its own facilities. Only the CLECs can provide this information. However, relying on information that it does have available – i.e., the E911 database – Verizon developed an estimate of the number of residential lines CLECs serve in Virginia using their own facilities. This database provides a reliable estimate because both ILECs and CLECs have strong incentives to maintain them accurately.[146] Both the FCC and the Department of Justice have repeatedly relied on E911 listings to estimate facilities-based lines in Section 271 proceedings.[147] This Commission also has reviewed E911 listings to when considering competition by facilities-based carriers.[148]

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[146] *See UNE Fact Report 2002* at A-2 – A-3.

[147] *See id.* at A-3 & n.8.

[148] *See I/M/O Verizon Virginia Inc.To Verify Compliance with the Conditions Set Forth in 47 U.S.C. § 27(c)*, Report of Alexander F. Skippan, Jr., Hearing Examiner, Case No. PUC-2002-00046, July 12, 2002.

Q. WHAT DO THE LINE COUNT DATA SHOW ABOUT CLEC SHARE OF THE WIRELINE MARKET IN THE RESIDENTIAL SEGMENT OF THE MASS MARKET IN VERIZON'S SERVICE AREA?

A. While market share data do not begin to tell the entire competition story, available market share data indicates that CLEC competition is robust in Virginia. As of March 2006, CLECs serve approximately **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] percent increase in CLEC served residence lines since 2003.

Since 2003, Verizon has experienced residential line losses in every MSA and in all but one non-MSA region. The overall CLEC market share of residential wireline access lines has grown from **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL].

While this market share data is not the best indicator of the competitiveness of a market or whether Verizon possesses market power, it does demonstrate that competitors can easily enter and are actually present in the residential customer segment of the mass market across Verizon's serving territory in the state. The

data also show that Verizon has lost a growing number of customers to CLECs providing alternatives to Verizon's services.

Q. PLEASE DESCRIBE THE EVIDENCE OF CLEC FACILITIES THAT YOU HAVE GATHERED.

A. As mentioned above and demonstrated by Exhibit VA-17, CLECs have deployed 69 switches throughout Verizon's service area.[149] At least one switch serves customers in each MSA and non-MSA region, and some MSAs are served by as many as 23 CLEC switches.[150] CLEC presence, as evidenced by a switch, is not confined to the radius of customers currently served by that switch, since they can be used to serve customers in parts of an MSA or non-MSA region that are not currently served.

Q. PLEASE PROVIDE A PROFILE OF THE MAJOR TRADITIONAL WIRELINE CLECS PROVIDING SERVICE IN VERIZON'S VIRGINIA SERVICE AREA.

A. Exhibit VA-23 contains a profile of each of the CLECs currently offering mass market services that compete with Verizon's services, and the services they provide. The following are just a few of those providers:

- **at&t** is one of the largest facilities-based CLECs in the United States. As of March 2006, at&t serves about **[BEGIN CONFINDENTIAL]**

[END CONFINDENTIAL] residential

[149] LERG.

[150] Exhibit VA-17 shows the physical location of and radius served by each CLEC switch in Verizon's service area.

access lines using Verizon's Wholesale Advantage service offering. at&t has deployed a network in the Richmond metropolitan area with two local switches. It also operates local switches in Norfolk, Roanoke, Fredericksburg, and Arlington.

- **Cavalier Telephone** is based in Richmond and operates local voice switches in Richmond, Norfolk and Herndon. The company targets both residential and business customers for its voice, Internet, and data service offerings. It provides local voice and data service in **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL] residential access lines in Virginia. Cavalier Telephone also recently launched a broadband television service in Richmond and Williamsburg. Using Verizon UNEs, Cavalier advertises that it delivers an unprecedented bundle of services: standard telephone, broadband DSL, and digital TV.[151] Cavalier has 150 digital channels of entertainment, including local programming news and weather, and its triple play bundle (voice, broadband, and video) is $95 per month. On September 22, 2006, a merger was announced between Cavalier Telephone TV and Talk

[151] See Cavalier Press Release, "*Richmond, Virginia to be the First in the Nation to Receive Revolutionary Broadband TV Technology*," 5/22/2006, http://www.cavtel.com/company/press/2006_5_22.shtml. (accessed November 16, 2006).

America, a leading competitive, integrated communications provider that offers phone services and high speed Internet access to both business and residential customers. This merger will create one of the largest competitive communications companies in the United States with over $750 million in revenue. Cavalier CEO Brad Evans commented, "The combination brings the strengths of two of the nation's most successful competitive carriers together."[152]

- **NTELOS** is a leading provider of wireless and wireline communications services to consumers and businesses in Virginia and West Virginia. Headquartered in Waynesboro, Virginia, NTELOS serves customers as a CLEC in **[BEGIN CONFIDENTIAL]**

[END CONFIDENTIAL]

residential access lines in Verizon Virginia's footprint. NTELOS offers a package for $59.95 to residential customers in their serving area that bundles voice, wireless and high-speed DSL.[153]

[152] *See* Cavalier Press Release, "*Talk America to Be Acquired by Cavalier Telephone & TV*," released September 22, 2006.

[153] *See* http://www.ntelos.com/landline/residential/iocaltelephone.html (accessed November 14, 2006).